



BADGER STATE Smoke Signals



Serving Amateur Radio in Wisconsin

Published Monthly Since 1969

Vol. 17 No. 5 - 197th Consecutive Monthly Issue - Baraboo, Wis. - May 1986

NEW SPECTRUM UTILIZATION PLAN PROPOSED: In a surprise move, the Fraternal Amateur Radio Technologists announced a bold six-point plan designed to increase the efficient use of the radio spectrum: (1) Reduce transmit time ("CQ" would become "C" and called only once). (2) Push-pull output circuits would become push only. (3) Horizontal antennas would be replaced by space-saving verticals.

(4) Continuous wave emissions would become discontinuous (or intermittent at best). (5) Spread-spectrum emissions would be allowed only if they are spread very thin (less than an inch thick). (6) Voice transmissions must be spoken very fast, omitting unnecessary conjunctions, syllables, and vowels. Implementation is expected at WARC '99. (WA4PYQ in the GEARVAKf Bulletin)



Badger State Smoke Signals supports: The American Radio Relay League (ARRL) - The Wisconsin Nets Association (WNAI) - The Wisconsin Association of Repeaters (WAR) - The Amateur Radio News Service (ARNS) - The Courage Handi-Ham System - The Morse Telegraph Club - GEARVAKf (The 'f' is silent)

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 print items from BSSS provid-
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SWAPFESTS AND OTHER SOCIAL EVENTS

The Ozaukee Radio Club presents its Eighth Annual Swapfest at Circle B. Recreation Center (intersection of Highway 60 and County I) Cedarburg, WI on Saturday, May 3, 1986. Amateur License exams will be administered. (see Test Point) Admission: \$2.00 advance, \$3.00 at the door. Tables: 4-foot at \$3.00. Based on past experience, we strongly recommend that tables be reserved in advance. O.R.C. Swapfest Committee, 101 East Clay St, Saukville, WI 53080.

The DeKalb Hamfest sponsored by the Kishwaukee ARC will be held Sunday, May 4, 1986 at the Sandwich Fairgrounds (Guydam Road, just north of route 34), Sandwich, IL. Tickets: \$2.00 advance or \$3.00 at gate. Inside display tables \$5.00 each. Write: KARC Box 21, Genoa, IL 60135. Dealers Welcome, first come, first served or phone W9TWM (815) 756-6698.

Amateur Fair, St. Paul, MN. This years event will run two days, June 7th and 8th.

The Central Wisconsin Radio Amateurs, Ltd. Stevens Point Swapfest and Family Picnic will be held Sunday, June 15, 1986. (See the flyer with this issue.)

June 8, 1986 - Santa Fe Park, IL - Hamfest - Sponsored by the Six Meter Club.

June 28-29 -- FIELD DAY 1986

The 1986 South Milwaukee Swapfest will be held on July 12, 1986.

The 3rd annual Eau Claire Hamfest, sponsored by the Eau Claire ARC will be held on July 2, 1986, 8:00 am to 4:00 pm at the 4th building on Fairfax St. Admission: \$3.00 at the door. Free tables for Hams, Free coffee, commercial exhibitors, food, etc. Talk in on 146.52.

Saturday, August 16, 1986. The Green Bay Mike & Key Club's will be held at the Community Center behind St. Mary's Hospital (on Dousman St.) in Green Bay.
 September 20, 1986 -- The 1986 WNA Picnic.

Sunday October 12, 1986 -- The KMRA Swapfest in Waukesha, WI. KMRA, P.O. Box 411, Waukesha, WI 53187.

As a service to our readers, this section of Badger State Smoke Signals is available without charge to list your upcoming Swapfest, Hamfest, dinner, picnic, party or other event of interest to Radio Amateurs in Wisconsin and nearby areas.

Send information on your event to Kenneth A. Ebnetter, K9EN, 822 Wauona Trail, Portage, WI 53901. In addition, space is available at attractive rates on our advertising pages, and/or we can include your flyers. For information on rates and requirements for our advertising pages, and/or for including flyers, please contact K9ZZ or K9EN.

CLUB MEETINGS:Badger Amateur Radio Society

(W9YT - University of Wisconsin - Madison)

Regular monthly meetings are held at 7:30 PM on the 2nd Wednesday of every month while school is in session, in B314 Electrical Engineering Building.

Central Wisconsin Radio Amateurs, Ltd.

(Stevens Point)

Regular club meetings are held on the second Wednesday of the month.

Eau Claire A.R.C.

The Eau Claire Amateur Radio Club meets every second Tuesday of the month. Hams and guests are welcome.

The next meeting of the Eau Claire Amateur Radio Club will be held on May 13, 1986 at a site to be announced and relayed to all members.

LUNCH COMMITTEE: W9BAR, KD9KL, K9UX9, W9FAC & N9EQR

Four Lakes A.R.C. (Madison WI)

RED CROSS BUILDING, 4860 Sheboygan Ave, Madison, WI., first and third Tuesday each month.

Green Fox Amateur Radio Club

Meetings are held the third Monday of the month at 7:30 p.m. at the Green Lake Town Hall located at the intersection of county highways K and N.

Kettle Moraine Radio Amateurs:

All meetings are held on the SECOND (2nd) Friday of each month.

Manitowoc County Radio Amateurs

MANCOCRAD meets on the third Wednesday of the month at 7:30 p.m. at Manitowoc Red Cross at 20th and Washington Streets in Manitowoc WI.

Milwaukee Radio Amateurs Club:

All regular meetings of MRAC scheduled for 1986 at Wauwatosa Savings and Loan Building, 7500 West State Street, will be held on the second Thursday of the month.

Ozaukee Radio Club

Meetings held every second Wednesday at 7:30 p.m. in the Saukville Community Center

Riverland Amateur Radio Club

Regular meetings are held at 7:30 P.M., on the first Wednesday of each month in the Onalaska Community Center in Onalaska, WI.

South Milwaukee Amateur Radio Club

Meetings held at Legion Post 434, Shepard Ave., Oak Creek, on first Wednesday of the month. Auctions held at March and October meetings.

West Allis Radio Amateurs Club

Regular meetings are held on the second Tuesday of each month at St. Francis Savings, 9330 W. Greenfield Ave., at 8:00 P.M.

The Wisconsin Valley Radio Association. (Wausau)

Holds regular monthly meetings on the first Tuesday of the month at 7:30 p.m. The location varies, but information is available on the 146.04/64 repeater in Wausau.

Yellow Thunder Amateur Radio Club:

(Baraboo, WI)

All regular meetings of YTARC are at the Baraboo Civic Center. Meetings start at 7:30 P.M.

The meeting dates for 1986 are: May 19, in room 25, June 10, in room 25, July 16, in room 29, Aug. 14, in room 29, Sep. 15, in room 25, Oct. 14, in room 25, Nov. 12, in room 29, & Dec. 11 in room 29.

Let us know of your club meeting dates, and we will let others know of your meetings and activities. There may be Amateurs in your area interested in joining your club, or members of other clubs interested in making an interclub visit.

MISCELLANEOUS MISCELLANEOUS MISCELLANEOUS

Oh what the heck -- items of interest:

Four Lakes Amateur Radio ClubTHE FEEDLINE

It is with sadness that we reflect on the loss of fellow FLARC member W9DAX, who died on Friday, March 14, 1986. Our sympathy to his wife Ruth and the Prajke family. Irv's Amateur call goes back many years. He was also a member of NARA, CWRA and ARRL.

Green Fox Amateur Radio Club

(Green Lake)

FOXTALES

Three members have succumbed to Packet fever. The affected members are John, KD9GD, A.C., WB9RBC and Steve, WB9ZRE.

Roy, K9YHI is using the antennas that he bought at the GFARC auction on his snowmobile with great success. Congratulations to Roy, celebrating 25 years as a Radio Amateur in April.

Kettle Moraine Radio AssociationKETTLE DRUMS

WB9SMH and the Milwaukee County ARES are looking for a few good men and women to help out with the City of Festivals parade this year. There is no conflict with Field Day in 1986, so help out if you can.

Milwaukee Radio Amateurs ClubHAHAHAHA CHATTER

The Annual MRAC auction will follow the elections at the May 8th meeting. Travis Baird, W9VDD, inimitable auctioneer!

Rock River Radio ClubNEWSLETTER

DIGITALKER INSTALLED: On March 18th the Juneau repeater took on a new personality! You may have heard a computerized voice say "This is W9TCH Repeater". If you haven't heard it, key up the repeater (but please identify yourself!).

W/K ARCTHE DUP SHEET

Mrs. April Phules, the editor for Lower Subovia DX Jernil, reports that Archduke Ferdinand, ZAZAW, will be operating from Albania on April 1 from 2559Z to 2650Z on 14.413 MHz LSB. All times in UTC. QSLing is a piece of cake due to the large number of routes the Duque has set up. QSL via BIRD, FOOL, HMAX, ID10T, JOKE, SLOB, or the top drawer of the bureau.

Our thanks to the above mentioned clubs and their bulletins for the information presented. Badger State Smoke Signals will be pleased to exchange bulletins and information with your club. Please contact K9ZZ or K9EN.

THE TEST POINT

The following are known locations where Amateur Radio license examinations are scheduled in the Badger State area.

May 3, 1986	Cedarburg, WI
May 17, 1986	Robbinsdale, MN
June 7, 1986	St. Paul, MN
June 15, 1986	Stevens Point, WI
July 19, 1986	Minneapolis, MN
August 16, 1986	Robbinsdale, MN
September 20, 1986	St. Paul, MN
October 18, 1986	Minneapolis, MN
November 4, 1986	Stevens Point, WI
November 15, 1986	Robbinsdale, MN
December 13, 1986	St. Paul, MN
Third Sat. Monthly	Loves Park, IL

General rules for all examinations:

All examinations require filing an FCC Form 610 and advance registration at least 30 days before the exam date. (Some VECs may permit walk-ins. Check with sponsor to find out if they allow walk-ins.)

To register for these examinations, you must first secure a copy of the current FCC Form 610 and fill it out completely (AND CORRECTLY). Get your form from the FCC Field Office, the ARRL or Badger State Smoke Signals. Send a 22¢ SASE if you request one from the ARRL or BSSS. In most cases, forms can also be obtained from the sponsoring group. Remember-- you must file at least 30 days in advance unless otherwise indicated.

ARRL/VEC examinations require a check for \$4.25 payable to ARRL/VEC.

The FCC now requires applicants to show their original Amateur license to the VEC. As in the past, a copy of your license must be attached to your FCC form 610.

Additional information is given below.

Saturday, May 3, 1986 Cedarburg, WI

Ozaukee Radio Club - Swapfest

Contact: Ed Rate, AA9W
9822 N. Andover Court
Mequon, WI 53092

June 15, 1986 Stevens Point, WI
November 1, 1986 Stevens Point, WI

Central Wisconsin Radio Amateurs, Ltd. - (ARRL/VEC)

Contact: Joe Larson N9JW
644 Portage Street
Stevens Point WI 54481

MILWAUKEE VOLUNTEER CORE GROUP - (DEVRY VEC)

May 17 - June 21, 1986

The MUCG will be giving Amateur Radio exams in the Service Occupation Building in rooms S0208 and S0209 at the Waukesha County Technical Institute on the above dates. Walk-ins are welcome. Free coffee. Exams start at 9:00 a.m. Exam fee is \$4.00. Please bring your original Amateur license - FCC rules require the examiners to look at it. If interested in being examined, please send a postcard with your name, address, telephone number, date you wish to be examined, and the grade of license you wish to achieve. Send the card to Syl Janczak, WD9JKZ, 3127A West Madison, Milwaukee WI 53215.

Note: All exams are available in Braille, large type, and on cassette tape for the visually impaired. Exams for shut-ins by appointment only.

MILWAUKEE METRO AREA TEST TEAM. - (MRAC VEC)

In room 256 at the Wauwatosa East High School, 74th and Milwaukee Ave. Use the East (74th Street) entrance.

File on a Postal System post card (14¢) mailed to:

The Milwaukee Radio Amateurs' Club, Inc.
N50 W16328 Pin Oak Court
Menomonee Falls, WI 53012

PLEASE PRINT listing the grade of license you are applying for, your name, address, including Zip Code and your telephone number.

MRAC -- Your Wisconsin based VEC for Region 9.

Third Saturday of every month.

Northern Illinois Volunteer Examiners (DeVry VEC).
Held at North Suburban Library on North Second Street in Loves Park, IL.

Contact:

Gene Melton, AK9N
124 S. Chicago Ave. #2
Rockford, IL
(815) 229-7249

Minnesota tests - contact information:

Gopher/Minneapolis ARC:	Robbinsdale ARC:
Fred Hird	Neil McMillan
4716 Emerson Ave. S.	11132 97th Place
Minneapolis, MN 55409	Minneapolis, MN 55369
824-7702	(424-6248)

St. Paul ARC:

Jay Bellows
997 Portland Ave.
St. Paul, MN 55104
222-7253 (home) - 291-8015 (work)

This section of Badger State Smoke Signals is available to publicize your Volunteer Examiner Amateur Radio license examination schedules.

Please send us your schedules of dates, times, and locations that you will be conducting examinations and we will include the information here. Be sure to include contact address and any other necessary requirements. Information should be sent to K9EN or K9ZZ at the address shown on page 2.

MILWAUKEE VOLUNTEER CORE GROUP EXAM RESULTS

On Sunday, March 16, 1986, the Milwaukee Volunteer Core Group, under the sponsorship of the Tri - County Amateur Radio Club, had a total of 27 applicants for exams at the Jefferson Swapfest. Of these, we had two new licensees and 11 upgrades, with one of them being credit for 20 wpm code. Congratulations are in order for the following:

Eugene Olig, no license to Technician
Mike Tuchsolski, no license to Novice
Dennis Crowe, Novice to General
Richard Miller, Advanced to Extra
Daniel Ebnetter, General to Advanced

(continued on page 5)



YELLOW THUNDER A.R.C.

The April 10, 1968 meeting of the Yellow Thunder Amateur Radio Club, Inc. was held at the Baraboo Civic Center, in Baraboo, Wisconsin.

Due to the absence of a quorum there was no business session.

The class committee reports that two members have taken and passed their Novice examinations. Sandy Hemmer passed a few weeks ago and has received the call KA9VFW. Jon Nelson passed a couple of weeks ago and is awaiting his letter from the FCC. Our congratulations go to Sandy and Jon.

Steve Schwoegler, WB9RNL made an application to re-join the Club. (This will be voted on at the May meeting.)

The members present spent the evening in a general discussion of club affairs, computers and printers, and Amateur Radio in general.

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TEST POINT -- (continued from page 4)

Cherly Miller, Novice to General
Douglas White, Novice to Technician
Jim Neese, General to Advanced
Justin Donovan, General to Advanced
James Hugo, Novice to Technician
Edmund Scrip, Advanced to Extra
David LaCrosse, Advanced to Extra
Kyle Jeske, 20 wpm code credit

The members of the Group will travel to most parts of the state to administer exams to the visually impaired. If interested, please contact Syl Janczak, WD9JKZ, 3127A West Madison, Milwaukee WI 53215 or call (414) 672-7702.

EXAM RESULTS - STEVENS POINT

March 8, 1986

Congratulations are in order for the following upgraders:

Larry Guthu, WB9ICH, New London, to Advanced
Mike Pagel, KA9LAQ, Stevens Point, to General
Joe Mangal, KA9TTU, Westfield, to Technician
Bill Mc Cullough, W9CWM, Wis. Dells, to Advanced
John MacCarthy, KA9LNE, DePere, to Technician
Frank Knapp, Stevens Point, passed Novice and 13 wpm code test.

YTARC BIRTHDAZE:

The following YTARCs are celebrating their birthdays in the Merrie Month of May.

Harry W. Westlund	K9EHJ	May	7
Bob Johnson	WB9EIW	May	11
Peter Sweeney	WD9JIB	May	13
Phil Anderson	W9TP	May	31

SENTENCE SERMONS:

Minds are like parachutes -- They only function when open.

---Thomas R. Dewar

A closed mind is an enigma indeed. -- Nothing ever goes in, But odd things are forever coming out.

---Anna Jameson

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Nine persons took exams, so six upgraders produces a passing rate of 67%.

Examiners were Joe Larson, N9JW, Frank Guth, W9BCC, and Gene Santoski, K9UTQ.

Exams are planned in Stevens Point for Sunday, June 15 (in conjunction with the Central Wisconsin Radio Amateurs Swapfest) and on Saturday, November 1, 1986. Both exam sessions are scheduled for the Blue Top Motel. More information is available from Gene Santoski, K9UTQ, 1220 18th Ave So., Wisconsin Rapids WI 54494, Joe Larson, N9JW, 644 Portage St., Stevens Point WI 54481, or Frank Guth, W9BCC, 1632 Ellis St., Stevens Point.

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NEW RECIPROCAL AGREEMENT

(From GEARVAKf, Winter, 1985)

The FCC has announced a new reciprocal operating agreement between the U.S. and Libya. Under terms of the agreement, the FCC has authorized the operation of pipe bombs and hand grenades by U.S. Amateurs while visiting Libya. Applications are not required and no special licenses or callsigns will be issued.

-N4GG

The Cell wars Continue

From the Westlink Report
April 4, 1986

Hobby radio listening should be banned - or at least limited - under the proposed Electronic Communications Privacy Act (HR-3378), according to a California congressman.

This was the gist of the testimony of Representative Carlos Moorhead (R-Calif) before the House Subcommittee on Courts, Civil Liberties and the Administration of Justice on March 5th. (Editor's Note - Rep. Robert Kastenmeier, D-Wis., is Chairman of that subcommittee, and is also a co-author of this bill.)

Moorhead's comments were in rebuttal to those of James Knapp, Deputy Assistant Attorney General of the Justice Department's Criminal Division.

Earlier, Knapp had testified that his agency did not think that citizens scanning for recreational purposes should incur criminal or civil liability, and that the final version of HR-3378 should contain a provision that a citizen would only incur liability where he both intercepts and divulges the communications under circumstances in which "the interception and divulgence are illegal, tortious or for criminal gain."

The Justice Department's position was severely criticized by Moorhead. "It's very clear that there's all kinds of mischievous things that you can do if you've got one of

these scanners," said the California representative, continuing that you can hear "family fights, conversations between someone and their girlfriend, inside information that stockbrokers might be giving out on the phone," and quoting from a recent scanner manufacturer's ad, "military, FBI, space satellites, police and fire departments, aeronautical bands, immigration, paramedics, amateur radio, Justice Department, State Department, plus thousands of other frequencies.... These are people's private calls, and obviously something should be done to limit the range of these scanners.... Our bill tries to get at the basic problem, and that is deliberately trying to intercept these calls."

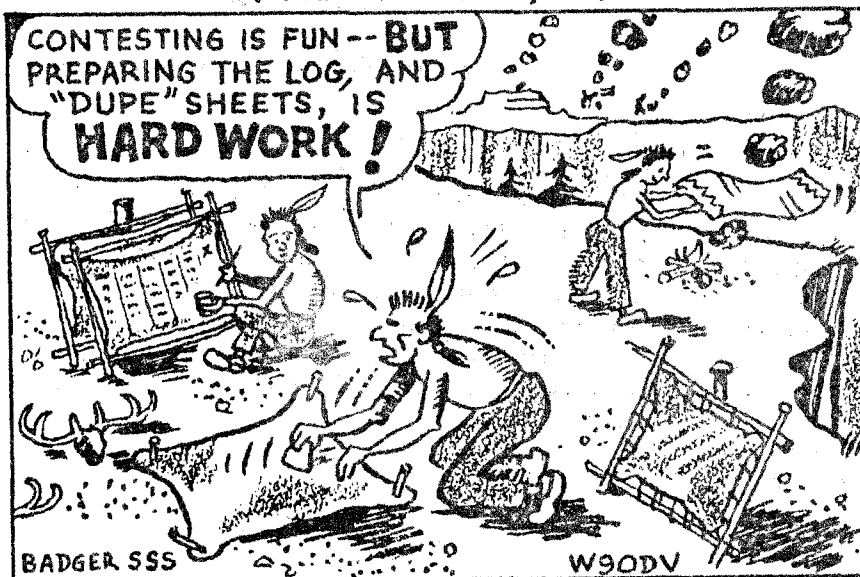
Moorhead continued by saying that there was "no intent" to affect someone who "happens to get on their band or something.... They should just switch to the next band.... What concerns me is that you say that you cannot generally try to protect these calls."

The Justice Department had argued that since cellular telephones can be picked up on various types of receivers (as can cordless phones), "the cellular transmission conceivably should be entitled to no more reasonable expectation of privacy than the cordless [telephone] transmission unless it has been encrypted in some way."

Based on Moorhead's testimony, the Justice Department's Knapp agreed to again look at the problem of whether, in his words, "we should go that second step, and predicate a violation based on the interception [of a radio signal] itself."

Also providing written testimony at the hearing was the Association of North American Radio Clubs (ANARC), an SWL group, which noted that as a part of its research it found what it described as "shockingly pervasive misrepresentation" by cellular system operators about the privacy of cellular phone transmissions. ANARC refuted the often-repeated argument that cellular phone calls are harder to receive than cordless telephone calls. It noted what we here at Westlink Report stated several months ago: cellular telephone calls are substantially less

CQ FIELD DAY 5,9 5,9



secure than the simple cordless cordless phones because there already exist millions of receivers for the cellular spectrum in the form of consumer television sets and VCRs, and cellular has a far wider broadcast range than any legal cordless telephone. Therefore, says ANARC, "the vulnerability of cellular is profound and directly attributable to the way in which it was designed."

(Westlink Report Editor's Note: It is still our sincere belief that cellular and other interests outside of Amateur Radio intend to usurp the right of the public to freely monitor non-encrypted radio transmissions for their (cel-tel's) own profiteering motives.

The words of Representative Moorhead appear to indicate that this is the thinking of some legislators as well.

When we first alerted our readers of this situation, there were many voices, including some at ARRL Headquarters, who indicated that Westlink was blowing the situation all out of proportion: "Don't worry, we have been consulted, given input and kept Amateur Radio protected." But we at Westlink Report are not just trying to get some cheap publicity out of a trivial situation.)

(Congressman Moorhead's testimony brings out, once again, the fact that Radio Amateurs must be on constant vigil to protect the rights of hobby radio users of all types. Don't believe the "big cell - tel lie." This "harmless" move to "protect the privacy of the average American citizen" is not going to leave us with more freedom -- it will leave us with less. No legislation intended to limit the free use of receivers should be allowed to get out of committee.)

NTRN RESCHEDULED

The National Teleconference Radio Net on Lightning Protection, which was abruptly cancelled on March 7, will be held May 1.

Ed Bellamy and Bill Paulin, of Lightning Elimination Electronics in Santa Fe Springs, California, will address the subjects of lightning and power surges.

Also on the program will be Charles Kosman, WB2NQQ, who helped organize communications for the 1984 Olympic Torch Run. He will discuss the upcoming "Hands Across America" event, where more than 6,000,000 Americans are expected to hold hands from coast to coast. Amateur Radio will be used to coordinate the entire event, and you can take part as well (see below).

The NTRN will take place at 0800 CDT on May 1, 1986. (BSSS questions this time, as it is 8:00 a.m., rather than the usual evening time for the TRN. k9zz)

HANDS ACROSS AMERICA

Amateur Radio has been selected to provide primary communications for "Hands Across America."

On Sunday, May 26, 1986, some 6,000,000 Americans will attempt to join hands in a line stretching over 4,000 miles from New York City to Los Angeles, California. This event is being sponsored by the same people who sponsored the USA for Africa benefit last year.

Selected as the National Communications Coordinator for "Hands Across America" is Charlie Kosman, WB2NQQ. In 1984, WB2NQQ organized the communications for the Olympic Torch Run across America that lasted 82 days.

The "Hands Across America" people need volunteer Amateur Radio operators every mile of the 4100 mile link, plus others. That comes to between 4,300 and 4,500 Hams equipped with VHF and/or UHF portable gear.

Among those assisting WB2NQQ will be ARRL Hudson Division Vice Director and communications expert Steve Mendelsohn, WA2DHF.

On May 25, the line of hand-holding Americans will pass through the following areas: Delaware, Eastern and Western Pennsylvania, Maryland, Washington DC, Southern New Jersey, Illinois, Indiana, Arkansas, Tennessee, Kentucky, Ohio, New York City, Long Island, Northern New Jersey, Missouri, New Mexico, Arizona, Los Angeles and Texas.

Amateurs who wish to take part in this effort, which has been subtitled "Hams Across America," are advised to contact their local ARRL Section Manager or write Hams Across America, P.O. Box 308, Quakertown, NJ 08868. Include information on what VHF/UHF portable gear you own and any expertise you may possess.

Kosman concludes, "This promises to be the largest single event ever, with Amateur Radio taking front row center."

DE K9ZZ

I forgot to welcome the Eau Claire Amateur Radio Club to our pages in our last issue.. so.. welcome! We hope our association continues for many years.

BSSS welcomes articles and photos. If you have either or both, please send them to my address on page 2. In particular, if you are a volunteer examiner, we would like to have the results of your exam sessions.

Small Talk

Richard Regent K9GDF
Section Manager WI
5003 South 26th Street
Milwaukee WI 53221

Q. Is there a Worked All States award for RTTY?

A. Sure is. Besides the basic WAS award (mixed bands and/or modes) for confirming all 50 states, there are specialty awards, numbered separately, for RTTY, OSCAR satellite, SSTV, 432 MHz, 220 MHz, 144 MHz, 50 MHz, 160 meters, and the 75-meter 2-letter Extra Class.

Endorsements are available for SSB, CW, Novice, QRP, and any Single Band.

To apply, submit QSLs and an application form to Headquarters or to a local ARRL Special Service Club (SSC) Awards Manager. SSCs in Wisconsin are the Four Lakes ARC, Riverland ARC, Green Bay Mike and Key Club, Ozaukee RC, and Green Fox ARC.

U.S. and Canadian WAS applicants must be ARRL members. For an application form (MCS-217), award rules (MCS-264), or a free 8 1/2 inch by 11 inch WAS map (CD-222), send an SASE to Headquarters, an SSC, or to me.

Q. Where can I find someone to help me study to become a licensed Radio Amateur?

A. Our Wisconsin Affiliated Club Coordinator (ACC) Greg A. Miller, KA9FOZ, 2522 Wood St., La Crosse WI 54603, can

direct you to clubs in your area. Radio clubs usually have a training program or have a member who is willing to help you study.

The American Radio Relay League (ARRL), 225 Main St., Newington CT 06111, phone 203-666-1541, can refer their Registered Instructors, who live within a few Zip Codes of your house, to contact you for study arrangements. These capable Instructors can administer the Novice Class exam to help you get licensed and on the air, or they can describe the Volunteer Examiner Program in your area to upgrade your license.

Actually, you could study alone for the Novice license at your own convenient pace, with a self-study kit called the ARRL "Tune in the World." It includes both a book and code cassette for \$10.

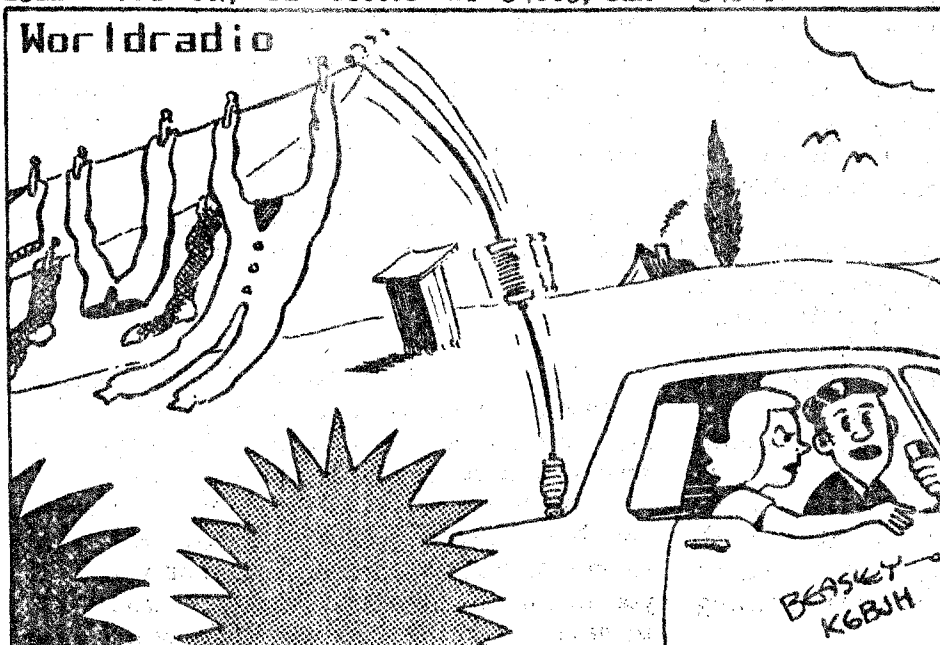
Q. A crazy neighbor reported my antenna to the City Building Inspector, who ordered "Take that hazard down or I'll fine your landlord!" I took it down, am now off the air, and need advice.

A. Dear Off-The-Air: As a tenant, your control of the situation is a bit shaky, but the main problem was violation of City Code related to safety, health or welfare. Hopefully you have a written copy of the violation from the Inspector and can match it with the Code that describes the hazard prohibition.

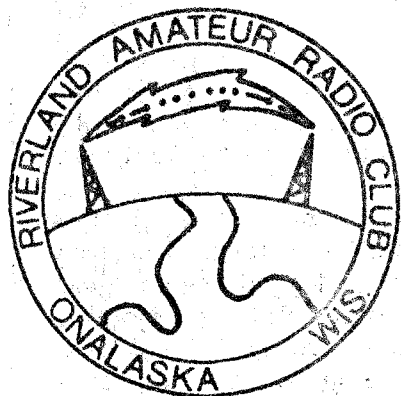
Then contact our ARRL State Government Liaison (SGL) John R. Ackerman, Jr., AG9V, 1121 Rockwell Rd., who is a full-time lawyer in Green Bay WI 54303.

Discuss your experience, he might suggest a few options. With help from John and your landlord, plus the new FCC antenna preemption ruling, you should be on your way to finding a satisfactory solution.

Please send your questions and problems to K9GDF, 5003 S. 26th St., Milwaukee WI 53221.



YOU'RE RIGHT, THIS ISN'T THE SHORTCUT TO EAST ANTIOCH -- AND I CAN'T WORK ANYBODY ON 75 METERS!



On April 2, 1986, at 7:40 p.m., the regular monthly meeting of the Riverland Amateur Radio Club was called to order by President Craig Goldbeck. Minutes of the March meeting were approved as read from Badger State Smoke Signals. Treasurers report was approved.

37/97 Report: At this time, a trip to the site is being planned to check on the repeater. Nothing else to report at this time.

RTTY Report: There have been some problems with the repeater which Duane has been working on, at this time everything is back in working order.

Volunteer Report: We are looking at the end of June for the next exam session, presently six people have expressed an interest in taking an exam.

Old Business: Winner of our Prefix Contest was Ken, N9CDT, with 62 prefixes, ALL RTTY. Congratulations, Ken.

There was discussion on the possibility of a larger swapfest in the La Crosse area. Several questions were raised, both pro and con. A committee was set up to study the issue further.

Roger Reader has designed a QSL card with our Club logo on it, anyone interested in ordering some of these with their call on it can see Roger after the meeting.

Some items that the Center needs were brought up, a chalk board, a large coffee pot, and handicapped parking signs. Of the three a motion was made and seconded that the club purchase a portable chalk board that would be donated to the Community Center for the use of anyone that uses the Center. The motion was passed.

Copies of our newly adopted Constitution are available to all members, get a copy after the meeting or one can be obtained from the Club Secretary.

New Business: There was no new business.

Meeting was adjourned at 8:15 p.m. Total members present was 29. Packet Radio was on display as well as guests were visiting from the Winona ARC.

Respectfully Submitted, Greg A. Miller, Sec. Treas. RARC

Additional Notes

Thanks to some members of the Winona ARC that came down to attend our meeting. Their presence at our meeting added greatly to a successful meeting. With their presence, it brought the total of 42 in attendance, a new club record. Thanks a lot, Winona, come down and join us any time.

Listed below are the calls of all members that have paid their dues for 1986. If your name or call does not appear here, contact Greg Miller.

W9DMH	AA9M	KA9LQF	K9EGQ
N9FDE	WB9QFC	WA9BIK	W9CIL
KØJYB	W9UP	KA9RMO	WB9GPI
WA9NWA	WB9BJQ	KAØEJZ	W9JLH
K9LEC	NI9V	WAØVHO	W9QHN
WØJDC	K9ZVU	KA9BKK	KA9UUK
KD9EG	N9CDT	KB9RJ	W9HJV
WD9FKV	K9LBX	WBØWQJ	KD9RL
N9ETD	KA9RLI	W9NQS	WA9FIO
K9EGO	W9HWQ	KD9OY	KV9U
W9BI	KA9FOZ	W9KTD	WB9VYI
W9DM	N9ECE	WA9OAE	K9PBE
KR9A	W9AKY	W9KAZ	W9SFL
N9DBK	KB9FM	KAØSDT	

Members Present

Greg A. Miller	KA9FOZ
Van Elston	WA9FIO
Craig Goldbeck	N9ETD
Bruce Bjerstedt	K9CUT
John Young	W9KAZ
Bob Colleran	W9JLH
Bill Wood	WB9VYI
Ernie Gershon	K9ZVU
Art Osborn	WØJDC
Jack Yoshizumi	W9KTD
Tom O'Brien	WB9BJQ
Ron Reed	KD9OY
Roger Reader	KA9BKK
Al Skwiertz	W9QHN
Steve Mrachek	N9CEY
Gary Webb	NI9V
John Markos	KA9LQF
Phil Long	KA9RLI
Rick Williams	KV9U
Mike Nelson	KB9RJ
Herman Ludvik	W9HJV

Riverland ARC - Continued From Page 9

Dallas Miller	K9LEC
Ray Wakeen	WA9HHM
L.F. Bentzen	K9EGO
Duane Fruechte	W9HWQ
Ken Weigel	N9CDT
Dick Low	KØJYB
Bill Winder	K9EGQ
Charlie Burch	KA9UUK
Bob Kathan	
Gary Countryman	KD9RL

Guests Present

Les Hittner	KØBAD
Geo Boller	KØDHI
Tim Thompson	NFØE
Ken Spittler	NØJC
Bob Kauphusman	WØNE
Ina F. Coon	WØLH
Jackie Lyon - Jack Lyon - Phillip Weigel	
Jack Stansfield - Robert Marconi	

Propagation Predictions

By Woody Minar K9EF
13508 Tabscott Drive
Chantilly VA 22021

One may hear of the Boulder, the Fredericksburg, or other individual "A" or "K" indices. The difference between these indices and the planetary A (Ap) or planetary K (Kp) index is that the magnetic field is measured at each observatory every three hours, then averaged for a daily index for that observatory.

The Ap or Kp index is the average of all the individual indices. The Ap or Kp index provides us the state of the magnetic field worldwide, rather than the state of the magnetic field at one location.

For more accurate results, the Ap is used. For reference, the scale below shows the relationship of the planetary K (Kp) and Ap indices:

Kp =	0	1	2	3	4	5	6	7	8	9
Ap =	0	3	7	15	27	48	80	140	240	400

A reading of 0 indicates a stable earth magnetic field or good propagation, whereas the opposite end of the scale indicates an extremely unsettled or stormy earth magnetic field or bad propagation. To illustrate the scale, the stormy day of February 8th, 1986,

had an Ap of 208 (Kp=8). Infrequent very stormy days can drive the Ap between 100 and 200, and beyond. A typical day, though, ranges from an Ap high of 35 to 40 to an Ap low of 2 to 4.

When the daily Ap number is plotted on a graph, the relatively long-term plot will show predictable jagged peaks and valleys. For each 28 daily plot (one month), one will generally see two peaks and two valleys (think of seeing it as two sine waves.) When 12 monthly plots are averaged and they, too, are plotted on a graph, the net result for the year will be a predictable seasonal oscillation which is generally settled in the winter and unsettled in the summer.

Now, when the yearly figures are averaged and plotted, a predictable smooth curve similar to a hyperbole is created. Over the years, one will then see a little talked about five and one-half year cycle and, of course, the 11 year cycle.

To summarize, each point on the curve is indicative of the condition of the earth's magnetic field and propagation during that segment of time in the sunspot cycle. The plots pictorially show the magnetic effects of a sunspot cycle whether it is for a day, fortnight, month, season, year, 5.5 years, or 11 years. All can be predicted with amazingly accurate results.

Out-on-a-limb prediction: March 1987 should mark the turning point (bottom, lull, etc.) of the present sunspot cycle. If the sun continues to be highly predictable, the present trend indicates that the next six months of 1986 should see the best propagation we have had in the last two years. However, this small increase in propagation conditions is only the "calm before the storm" because propagation conditions will decrease rapidly in February or March and remain depressed for all of 1987 before it begins to improve with the next cycle.

Next month: The effects of the geomagnetic storms on humans and satellite operations.

The predictions are:

Apr 21-30:	Very bad
Apr 28-30:	Very good
May 6-8:	Bad
May 12-14:	Good
May 19-20:	Good
May 26-28:	Bad

73, Woody



EAU CLAIRE A.R.C.

NEXT MEETING

The next meeting of the Eau Claire Amateur Radio Club will be held on May 13, 1986 at a site to be announced and relayed to all members.

LUNCH COMMITTEE

W9BAR, KD9KL, K9UX9, W9FAC & N9EOR

APRIL MEETING

The meeting opened at 7:30 PM with about 45 present including 3 members of the novice class. Minutes were read and approved with one correction. Treasurer's Report was read and approved.

Old Business:

Community service report was given by KA9HWN in the absence of WA9WRM. The Spring Fever Six foot race was well attended, began promptly, and the communications aspect went off without a hitch. Volunteers included KA9HWN, KA9KAB, N9EPX, N9DHT, W9BAR, KC9NN and novice class member Joe Jarecki. Pres. Yost commented that members receiving requests for volunteer services should contact Public Service Chairman Thompson.

The report on School Subscriptions to World Radio was tabled until the May Meeting.

N9DHT reported on the status of the new repeater handbook. It is now at the printers for a cost of about \$100.00 and will be ready by the first of May. The club will own the printing plates. Five members volunteered to help with the collating and punching.

W9BAR reported on the trusteeship of the 84/24 repeater. KA9ELD will continue as trustee.

A check for \$200.00 was presented to the club on behalf of Mrs. Orlin Mickelson, wife of silent key WB9KAR. The donation is intended as a memorial to him. Orlin was a long time member of the club, had been active in local Ham Radio Affairs and was a gentleman of the highest caliber. He will be missed. The check was presented by WA9CCB and Pres. Yost will respond by letter.

AI9N, our esteemed Hamfest Director spoke at length regarding our hamfest preparations. Volunteers are needed to attend events at Stevens Point, Wausau and Onalaska to give tickets as prizes and to pass out flyers. Volunteers also needed for set-up, take down, registration and to contact local dealers. Larry commented that the first prize will be a Kenwood TS 130SE from TNT Electronics. 2nd & 3rd place prizes will be purchased from Midwest Electronics. Both firms will be at the hamfest. The hamfest will take place on Saturday, July 12th. Amateur Radio Exams will be given on Friday Evening and Saturday Morning.

K9UXP reported on the Madison Hamfest and N9FIN reported on the Rochester Hamfest.

W9NW reported on a new, faster Automatic Distribution System of amateur radio exams now in effect to VE's af-

filiated with W5YI-VEC. The Eau Claire team now has the capability of giving exams at any time circumstances so dictate at the discretion of the Team.

New Business:

Pres Yost commented that the local Packet Radio enthusiasts have contacted him regarding the use of our spare repeater (presently in W9FAC's custody) for Packet purposes. N9EQP and WB9ULA to check on the availability of a repeater pair. Packet operations to be limited to that repeater.

Pres. Yost reported that KC9A has offered to pay \$35-40 towards the cost of a repeater controller he knows of in the \$140-150 range. K9UXP queried as to who would install it. W9BAR to talk to KC9A, get information on the unit and report at the May meeting.

KA9RII has resigned as Net Manager of the West Central Wisconsin Traffic Net, to take over similar duties for the Badger Emergency Net on 3985. NB9H will take over.

K9UXP commented at some length on battery problems at the 31/91 repeater site. N9FIN volunteered two six volt deep cycle batteries for the repeater's emergency system and the charging system has to be reworked.

KC9NN reported on the 84/24 repeater squelch. W9BAR will adjust.

KA9RII has been in contact with a ham in Massachusetts whose club has established an operating Amateur Radio station in a local hospital for the purpose of rehabilitation. Station manned by volunteers. Lisa would like to see this started here. Club voted to support the proposal in concept only at this time. Lisa to make a presentation to Sacred Heart Hospital authorities on the matter and to report at the May Meeting.

The program for May will be a presentation by 2 U.S. Navy personnel from Project ELF (extra low frequency transmissions). All members are urged to contact other members so we have a good turnout. An extra large meeting room is being arranged. KA9HWN suggested that each member contact 3 other members. It was decided that volunteers each take a page of the club roster and make telephone calls as follows:

- Page 1- KA9LJK
- Page 2- W9NW
- Page 3- KA9HWN
- Page 4- N9DHT
- Page 5- N9CRD
- Page 6- N9EB

One of the visiting Navy people is the Commander of the Project at Sawyer Air Force Base in Michigan and both are flying in for the presentation which we understand will be audio-visual and very interesting. Other local clubs are being contacted and their members invited as guests.

Meeting adjourned at 8:50 PM.



WISCONSIN NETS ASSOCIATION

WISCONSIN NETS

NET	WNA	FREQ	UTC	COT	MANAGER
BWN	YES	3984	1100Z	0600	WD9IID
BEN	YES	3985	1700Z	1200	WB9ESM
WSBN	YES	3985	2230Z	1730	WA9ZTV
WNN	YES	3723	2300Z	1800	KA9OBP
WSSN	YES	3645	2330Z	1830	N9BDL
WIN-E	YES	3662	0000Z	1900	WB9ICH
WIN-L	YES	3662	0300Z	2200	KC9CJ
NWTN	YES	34/94	2330Z	1830	W9JSF
MCWTN	YES	31/91	2330Z	1830	KA9RII
GR.BAY	NO	72/12	0145Z	2045	WB9NRK
			THU	WED	
WRN	NO	3625	2300Z	1800	K9UTQ
			RTTY Mon. Wed. Fri. UTC		
			Sun. Tue. Thu. Local time		

SECTION MANAGER'S NOTES

Richard R. Regent K9GDF
Section Manager WI
5003 South 26th Street
Milwaukee WI 53221

Congratulations to the Green County ARA of Albany, Wisconsin, which has qualified as an ARRL affiliated club.

Kettle Moraine Radio Amateurs have adopted a member activity point system and rewards high scorers with ARRL publications purchased by the club.

You can easily spot the Green Fox ARC members by their beautiful new name and call badges; they gave my wife, N9DIJ, and me badges as honorary members.

New ATC is WD9DHI in Cedarburg, working hard on Ozaukee RC repeater.

See you June 7th when the Wisconsin Chapter of GCWA meets for dinner and auction, Port Washington Fish Shanty, social hour begins 11 a.m., guests and visitors are definitely welcome.

June 15th, CWRA Swapfest at Stevens Point with free admission, ARRL booth, exams at 9:00 a.m. coordinated by N9JW, and Wisconsin Nets Association will hold its meeting at 1:00 p.m.

June 21, Milwaukee City of Festivals Parade needs more Ham communicators, contact EC WB9SMM for details on how you can assist.

June 28 and 29, earn 100 bonus points by sending a proper message to me or SEC W9DAK during Field Day.

Volunteer Examiner WD9JKZ and assistants give tests for all Amateur license classes, including tests in Braille for the blind.

The Madison Swapfest was a tremendous success and had 54 candidates take license exams ('twould be great to have the results - k9zz.) Thanks to W9PRN, K9KM, K9UTQ and N9DIJ for their help at the ARRL booth. WA9USD passed the Extra test.

W9UW bought two Commodore 64 systems (is that one for each eye, Ron?)

WD9GNK gave a talk "The Computer and the Ham" at ORC meeting.

KA9RII has been appointed new NM for BEN, giving WB9ESM a chance to relax after many years of capably handling the job.

W9CBE once lost a spelling bee on the word 'prairie', that's why he now has no trouble relaying messages to Sun Prairie on CW these days.

TRAFFIC UNDER FIFTY - MARCH 1986

AG9G 49, NB9H 46, W9ODV 41, K9FHI 35, K9BED 27, W9CXY 25, WA9USD 20, KY9P 16, WD9DND 13.

9RN CYCLE 4 REPORT MARCH 1986 QNI 372 QTC 609 QTR 1065 MINUTES IN 62 SESSIONS WISCONSIN PARTICIPATION NINETY TWO PERCENT STATIONS W9AUG W9CBE KC9CJ W9CXY W9DND K9GDF WB9ICH KA9OBP K9UTQ AND W9YCV 73 - W9JUI PEGGY NM

CAND REPORT FOR MARCH 1986 X 843 MESSAGES IN 31 SESSIONS X 09RN 100 PERCENT WISCONSIN STATIONS KA9RII W9ODV KC9CJ W9CBE X 73 - WSKLV NM

WISCONSIN INTRASTATE NET EARLY (WIN/E)

Larry Guthu WB9ICH, Net Manager
706 West Jennings
New London WI 54961

Hi gang! Here it is, time once again for some more written words of wisdom from your slightly under - the - weather net manager

I hope this will find many of you in good spirits, since Spring has really sprung, and now is the time to fix up that winter - damaged antenna so you can come on down and join us or get back on the net with a better antenna.

I would like to start off by saying that, after two unsuccessful attempts for the Advanced class, we finally passed the exam on March 8 in Stevens Point, so now the DX had better look out. HI!

Next, I would like to officially welcome N19R, Robin, and WD9IUX, Diane, to the net, along with much appreciation to WD9IUX for taking an NCS spot on Thursday nights. Please give Diane your full support and best of luck. That fills all our NCS spots, but we

still have openings for stations to go down to 9RM on Sundays, Thursdays and Fridays, in anyone is interested.

First quarter stats, compared with a year ago at this time, look pretty good. Here is how it stacks up:

	QNI	QTC	QTR
1985			
Jan	300	145/113	467
Feb	234	226/179	439
Mar	261	241/187	511
1986			
Jan	222	160/94	421
Feb	258	181/106	422
Mar	319	280/175	499

Here is another bit of trivial information for you who who like statistics: The top five people to QNI WIN Early for the first quarter (that is, out of a 90-day period) are as follows: N9BDL 89, W9NGP 75, W9YCV 68, W9CBE 65 and W9JCH 57. Congratulations to all, and I look forward to your continued support. I hope to see a few different calls in this spot over the next few months.

You will also find along with this report an updated copy of the net roster, NCS and 9RM schedule, and the net preamble. I hope that this will entice a few more of you phone people, along with others, to join us on down on 3.662 KHz to 7:00 p.m. local time.

I guess that will about do it for this time around. Hope to see a few of you over the next few months. Everyone have a happy and fun summer, and let's keep that WINning spirit.

73, Larry, W9JCH

GLASSBORO REPORT (Wisconsin Slow Speed Net)

Lee G. Andreas N9BDL
Net Manager
Route 1, 7600 Highway D East
Lake Tomahawk WI 54539

The winter on-air meeting of the Wisconsin Nets Association has just concluded, and I shot off my big mouth about the side-band nets not having a report in BGSS for the month of April. So it is time to put up or shut up with a CW net report.

For a change, there will be no complaining about the band conditions on 80 meters. Outside of the usual spring QRM, we have had some good traffic passing conditions. No one has had to hold a message due to the receiving station not being able to copy the sender.

The statistics for the past three months (January, February and March) are:

QNI	QTC	QSP	QTR
634	222	127	1627

Checkins and Traffic offered are up 25 and 24% respectively over a year ago for the first three months. Traffic cleared and time of nets are down 12 and 10% respectively when compared to 1985 for the same time period.

Close examination of the net reports indicates that four stations checked into the Wisconsin Slow Speed Net more than 50 times during the first quarter of 1986. Those individuals and their calls are Ed Rice, W9NGP, with 63; Ralph Storm, K9BED, with 60; Robin Ford, N19R, at 54; Jim Law, W9CXY, at 52.

Robin and Jim are the most recent certificated members of the WSSN. You, too, can receive a Section Net Certificate by checking into the net at least 30 times within a 90 day period. If I fail to have the Section Traffic Manager issue you one of the handsome certificates, send me a radiogram on the net and I will start the wheels in motion for the awarding of your certificate. Incidentally, this section certificate is different and larger than the QNI Certificate that I issue. While on the topic of QNI Certificates, I will report that I am behind in issuing again. Hopefully, time will permit an issue before the leaves come out on the trees. Work related details are constantly interfering with Hamming.

Please check the masthead for the WNA section of this newsletter for the times and frequencies of not only this net, but all the traffic nets in Wisconsin. Try to work one or more nets into your schedule. There is something satisfying about being involved in traffic handling. Give it a try.

Also, there are members of the WSSN that I have not had an eyeball with yet. This can be remedied on June 15th. There is a rumor that the next meeting of the WNA will be held on that date at the Stevens Point Hamfest. Even if meetings are not your bag, Hamfests surely are. This is not only an invitation to net members, but it is almost a threat to the editor of this fine little newsletter to be there. (Do you read me, Jim?) (10-4, Lee.. we'll see what happens. 10-4?)

Until the June meeting or the July issue of Badger State Smoke Signals,

73, Lee, N9BDL, NM

HAM RADIO VIDEOS

Richard R. Regent K9BDF
5003 South 26th Street
Milwaukee WI 53221

A recent meeting of the Kettle Moraine Radio Amateur's group highlighted a program on video trends. Here's what I recall.

Kent Winrich, N19U, aptly describes and demonstrates various video cameras, recorders, and monitors. Working for a firm that sells video equipment and makes recordings, he recommends Beta to VHS format for superior quality, and brought along equipment to give us a few glimpses of the latest video technology.

(continued on page 18)

WIN/E MEMBER ROSTER

CALL	NAME	QTH
AG9G	Dwight	Phillips
K9GDF	Rich	Milwaukee
KA90BP	Paul	Portage
KC9CJ	Dick	Milwaukee
N9AUG	Larry	Platteville
N9BDL	Lee	Lake Tomahawk
NC9G	Art	Park Falls
W9CBE	Hale	Mc Farland
W9NGP	Ed	Oconomowoc
W9YCV	Les	Greenfield
WB9ICH	Larry	New London
W9DND	Art	Cameron
K9LGU	Denny	New Holstein
W9CXY	Jim	Kenosha
KZ9V	Chuck	Phillips

OTHER STATIONS

K9UTQ	Gene	Wisconsin Rapids
NI9R	Robin	Eau Claire
WD9IUX	Diane	Prentice
WD9DNQ	Diane	River Falls
WD8LDY	Dave	West Virginia
KG9B	Joe	Plover
WA9USD	Kyle	West Bend
KA9RZL	John	Eau Claire
KB9W	Dan	
W9LSR	Clay	Park Falls

NET CONTROL AND 9RN SCHEDULE

	NCS	9RN
Sunday	W9YCV	
Monday	WB9ICH	W9YCV
Tuesday	W9CBE	WB9ICH
Wednesday	W9NGP	W9CBE
Thursday	WD9IUX	
Friday	N9AUG	
Saturday	KA90BP	N9AUG

WIN/EARLY NET PREAMBLE

WIN WIN THE WISCONSIN INTRASTATE NET A TRAFFIC NET OF THE NTS AND WNA LTD. WIN QND QNZ PLEASE WIN QNA 9RN DE (your call) K. QNA SSB K. WIN WIN QNI DE (your call) K.

After getting everyone checked in and all traffic possible cleared, sign the net out by saying WIN NOW QRU THANKS ALL FOR QNI WIN QNF GE

VACATIONING IN CANADA OR MEXICO THIS SUMMER?

(From the ARRL Letter)

Vacation season is almost upon us, and wherever an Amateur goes, so goes his or her Ham equipment.

If you're vacationing in Canada, remember that Canada and the United States share an automatic reciprocal operating agreement. FCC licenses are automatically valid in Canada, and you do not have to file with the DOC an application for an operating permit. You must carry your original FCC license. Should you have difficulty in getting your equipment through customs, tell the customs officer to refer to the Memoranda D2-1-1 and D19-4-2. They will remind the officer that your FCC license is valid in Canada and you can take your equipment into the country as part of your personal baggage.

If you're traveling to Mexico, Amateur operation there is more difficult. The U.S. and Mexico do not have a reciprocal operating agreement. Mexico, however, does issue operating permits to U.S. Amateurs with a General Class or higher license on a courtesy basis. An application must be made at least 6 weeks in advance of your visit and include your Mexican visa number.

For further information, contact ARRL Headquarters, 225 Main Street, Newington CT 06111.

Traveling abroad this summer? Better contact Headquarters now for reciprocal operating information.

FCC CITES SWAP NET PARTICIPANTS

As we reported in our last issue (of the ARRL Letter), the FCC monitoring station in Ft. Lauderdale, FL, had cited 21 Amateurs participating in a "Swap and Shop" net. The citations, which represented a change in the FCC position on this issue, had been issued without prior coordination with Washington. ARRL discussions with the FCC indicate that the FCC has not changed its position on this issue and the status quo will continue. Headquarters understands that the FCC will cancel the citations which were issued.



THE WISCONSIN PACKETEER

***** JULY MEETING *****

Thanks to Verne Teske (W9RYA) and the South Milwaukee Amateur Radio Club, W.A.P.R. has been given permission to hold its 2nd meeting of the year at the South Milwaukee Swapfest on July 12th, 1986. This meeting will take place in the "Clubhouse" on the grounds. You may want to come prepared to decide on a band-plan, elect new Board members, and to cover numerous other topics.

***** CORRECTION *****

On or about the weekend of April 12th, you most likely received your packet map from AREC, Inc., of the Milwaukee County ARES. This map, county listing, and packet radio information was compiled, printed and distributed as a courtesy of this organization.

The portions of information identified as "frequency use" did stir up some controversy. This information was not provided by the W.A.P.R. organization. Nevertheless, I am sure that it was not ill intended. This fuss should be at rest for now and I am sure we will survive until the band-plan is discussed and decided at the July meeting. Think this band-plan issue out very thoroughly so we can avoid future snags.

***** PACTECH *****

Welcome to pactech. Picking up from last month, I would like to continue with the switching between HF and VHF operating modes. There is a pack of packeteers in the north land (Alaska) that call them self Amateur Packet Alaska.

Now what these people have is an APA VHF/HF switch. This switch is different in that it is based on the 4066 quad CMOS ic. This means that you can manually switch modes or externally by logic. It's a kit with prime 1% precision parts and it is installed inside the TNC cabinet. The price for the kit is \$30.00 (airmail) or you may order their 15 page info. sheet on VHF/HF switch designs for a SASE and \$3.00 for copying costs. The address is: (And take a close look at it.)

Amateur Packet Alaska
AX.25 Communications Trail
Ester, Alaska 99725

Moving along to another topic. For you folks that have TNCs and run the DED firmware the latest version is now 1.1. So you should be able to obtain it from the same path you got version 1.0. I will list the improvements for you and with say goodbye till next time.

1. FRMR link status messages are displayed properly.
2. Monitored FRMR frames are displayed properly.
3. Handling of all supervisory frames has been improved.
4. Transmitter PTT line is not asserted if source call sign is left blank.
5. Connect requests from invalid or blank call signs are rejected.
6. Changing connection path from direct to via digipeaters works properly.

7. Handling of XON/XOFF has been improved.
8. Information sent to an unconnected channel (1-4 in a host mode is discarded.

One last thing, you may have noticed I have been favoring the TNC1 and 2 because that is what I have. So if anyone has info on an article about the other TNCs, please let me or Dave (W9ESH) know.

73 de N9EVI, Dennis.

***** TAKEN FROM ARRL GATEWAY *****

5th Computer Networking Conference Held in Florida

On Sunday, March 9, 1986 the 5th ARRL Computer Networking Conference was held in Orlando, Florida in conjunction with the Hamcation and Computer Show. The conference was host to packeteers from all parts of the country discussing their favorite subject, packet radio. The last such conference (4th Networking Conference) was held on March 30, 1985 in San Francisco, CA. (see Gateway Vol. 1, No. 17). Many of the papers published in the proceedings were presented at the conference. While the attendance at the conference was smaller than some had anticipated, the crowd was very enthusiastic.

Perhaps the most interesting development forthcoming at the conference was the demonstration of higher-layer (than the currently used link layer) protocol implementations. Two separate efforts were displayed. One of them consisted of an X.25 packet switch, a device that implements level 3 of X.25 and provides hop-by-hop ACKing across the path between two connected packet stations. This system, which is just a new firmware package for a TNC 2 is described in the article below entitled "Level Three Networking."

The other system shown at the Conference was developed by Phil Karn, KA9Q, and is an implementation of the DARPA Internet Protocol suite. Included are IP at the network layer, and TCP at the transport layer. Phil also has the UDP protocol, as well as a rudimentary (but functional) FTP, as well as several simple servers. Although the demonstrated system, which runs on a Xerox B20 or IBM PC, used a serial-line link layer, addition of a packet link layer should be straightforward. Both of these efforts promise interesting developments at the higher protocol layers in the very near future. Watch Gateway for news of future developments.

The following is a list of papers submitted for the conference.

- o "RF, RF Where is My High Speed RF?" by WB4JFI
- o "High-Speed RF Modem" by N4EZV & N4ICK
- o "An Application Note Describing a High-Speed Phase-Coherent FSK Generator" by N4ICK
- o "FSK Methods for PACSAT Communication" by KBKA & M.S.Hodgart

- o "A Packet Controller for the Revolution" by WA7GXD
- o "TNC2 Parameter Settings and Meanings" by W2VY
- o "Link Level Protocols Revisited" by KA9Q & WB6RQN
- o "Performance Enhancements for the Amateur Packet Network" by N2DSY & W2VY
- o "The PacketMaster Packet System for CP/M and DOS Computers" by AA4CG
- o "SAREX2 Software for TAPR TNC2" by N2WX
- o "Features of the VADCG TNC+" by VE7APU
- o "The Network User Interface" by K8MNO
- o "Amateur Network Addressing and Routing" by WB4JFI
- o "Proposal: Recommendation AX.121, International Numbering" by N2DSY and W2VY
- o "Plan for the Amateur Radio Network" by N2DSY & W2VY
- o "A Packet Assembler/Disassembler for Amateur Packet Radio Networking" by N2WX
- o "A Networking Node Controller for Amateur Packet Radio" by WA7GXD
- o "Authentication of the Packet Radio Switch Control Link" by WB3KDU
- o "Packet Switch Software Design Considerations" by WB4JFI
- o "User and Switch Packet Digital Hardware" by WB4JFI
- o "Introduction to the Hub Operating System" by KB4RCM
- o "Proposal: Recommendation AX.224, Class 1, Transport Protocol Specifications for the Amateur Radio Network" by N2DSY & W2VY
- o "Cryptography in Amateur Radio Communications" by WAUCH
- o "The UG-11 DCE Message Store-and-Forward System" by NK6K & KBKA
- o "Automated Traffic Handling Assistance" by WASMWD
- o "Packet Radio Demonstrations as a Supplement to Classroom Instruction in Telecommunications" by W5AHD
- o "Outline of Satellite JAS-1" by JS1UKR

A collection of the technical presented at the Conference have been compiled into a book entitled ARRL Amateur Radio 5th Computer Networking Conference. The book is available from the ARRL for \$10.00. In addition, a collection of technical papers presented at the 1st through 4th Networking Conferences are available from the ARRL for \$18.00. The Hamcation also hosted a meeting of the Ad Hoc Committee on Amateur Radio Digital Communications. Members of the Committee met on Saturday afternoon to discuss such issues as FCC Report and Order 85-105, channel congestion, message transaction protocols, international implication of packet radio, etc. A full report on the meeting will appear in the next issue of Gateway. ---WA2FTC

NNC UPDATE

We received the latest NNC update from Lyle Johnson, WA7GXD.

"The 'final' prototype PC boards were fabricated and a sample supplied for assembly. I finished assembling it and performed preliminary testing. So far, everything works!

"Both async ports (CONsole and AUXillary) send and receive data. The operating system boots and runs. All four HDLC ports have been exercised at 76.8 kbaud in a polling environment and work flawlessly. The parallel port, with supporting circuitry on board, properly drives the OkiData 93 printer using Mode 2 interrupts on the CPU.

"The floppy boards are now being delivered to TAPR for the Alpha and Beta testers. The digital board is undergoing electrical test, and a misalignment in the plotting on an inner layer in the board is being corrected at the CAD facility. Most parts are in hand for the test units.

"About half the people who volunteered have returned the letters of agreement to participate in the testing. If you have received a letter, please sign it and return it, or send me a note acknowledging receipt if you decide not to participate. I really need to hear from you!"

From WA7GXD

DIGITAL COMMITTEE MEETING

The Ad Hoc Committee on Amateur Radio Digital Communication met in Orlando, FL on March 8 to discuss current packet-radio issues. The following are highlights of the meeting.

1) FCC PR Docket 85-105 Report and Order

The discussion opened with a synopsis of the situation by Paul Rinaldo. He pointed out that, as written, the restrictions specified in the Report and Order apply to all amateur operations, not just digital modes. Twenty Petitions for Reconsideration have been filed with the FCC.

A primary concern of the Commission is undetected use of the amateur packet-radio network by commercial interests. Harold Price expressed a fear that, since the subject of an audit trail was introduced by the League, the Commission may decide to require such a record for network monitoring. Mr. Rinaldo replied that in talks with the Commission, the point was made that this kind of monitoring would occur without need of a specific FCC-imposed requirement.

President Price, Executive Vice President Sumner and Washington Area Coordinator Williams visited the Commission on February 27 to discuss the subject. The next day, the League filed a Petition for Extraordinary Relief for packet radio above 50 MHz using AX.25 protocol. Harold Price asked whether or not specification of a protocol set a bad precedent. Mr. Lockhart wondered how this affected the users of Vancouver protocols. Mr. Rinaldo said that the FCC had recommended that the petition for relief be as specific as

possible and not ask for more than we need to continue operation of the packet-radio network. In addition, specifying AX.25 in the petition would preempt any possible Field Operations Bureau objection that they would be unable to monitor transmissions.

Mr. Fox asked whether or not V-2 could be considered an AX.25-compatible protocol for the purposes of this petition. Mr. Quist recommended against asking the FCC for an interpretation of that question. Mr. Price reminded the Committee that the Commission's expressed concern was with monitoring of amateur packet transmissions, which would be problematic with regard to V-2. Mr. Rinaldo pointed out that it was a practical concern that the FCC be able to (a) read the transmissions and (b) identify the stations in communication, using off-the-shelf TNCs they could buy. Not many TNCs support V-2 (in addition to AX.25) anymore, and it is not possible for FCC to identify the stations as V-2 does not include call signs in the frame header; virtually no one is using CW IDs any more. Mr. Price suggested that the League publish that it was not the League's intent to have the FCC write AX.25 into the permanent rules.

Dr. Magnuski asked whether, in light of the questions of the definition of third-party traffic raised by this action, the Commission should attempt to define by example what is, and what is not, third-party traffic. Mr. Rinaldo replied that, besides being a difficult thing to do, it would be better not to ask the FCC at this time.

2) Congestion Reduction

Mr. Rinaldo reminded the Committee that this subject was discussed at the previous Committee meeting. At the January ARRL Board Meeting, a motion was made that the Digital, VHF/UHF and Membership Services Committees study the existing band plans with an eye toward increasing the spectrum available for packet-radio operation. The Committee members were requested to write to the Chairman with their recommendations, which will be used to draw up recommendations to be forwarded to the other Committees and subsequently to the Board.

Mr. Fox pointed out that the frequencies specified in his paper for the 5th Computer Networking Conference were drawn from discussions with The Middle Atlantic Repeater Council (TMARC). Some of these frequencies were subsequently coordinated for other users. Mr. Linstruth said that frequency coordination was always left to the local coordinators. Mr. Rinaldo replied that we need at least a packet-radio band plan. Mr. Fox asked why not simply state that the available frequencies need to be better utilized. Mr. Price said he thought that the available frequencies are sufficient with proper user education. Mr. Rinaldo asked if that meant that the current 145.0-145.1 MHz band is sufficient. Mr. Johnson pointed out that the use of full-duplex systems was not addressed by specifying that narrow range of frequencies. Mr. Rinaldo replied that the Committee should make it clear that the existing full-duplex repeater pairs may be coordinated for packet use.

Mr. Price suggested that QST articles would help to educate users about frequency usage. Mr. Johnson volunteered to write such an article. Dr. Magnuski pointed out that a capability to monitor the network is essential if the problem is going to be clearly defined, and part of the problem was improper adjustment of equipment, which includes modulation levels and TNC par-

ameters. Mr. Rinaldo wondered if an activity analogous to the "FM clinic" that used to be popular at hamfests would help solve the problem. General approval of that concept was expressed by the Committee. Mr. Price expressed a need for training aids and suggested

that the Committee generate a list of such aids for use by local clubs.

In the area of higher-speed packet-radio hardware, Mr. Rinaldo noted that the Committee cannot dictate solutions to industry. Mr. Price stated that the Committee could, however, aid manufacturers by advising them on the market demand for devices. Mr. Rinaldo added that amateurs, particularly TAPR, have already removed some of the risk in manufacturing packet equipment by offering proven designs. By extension, this could be carried over into high-speed modems.

Mr. Rinaldo recapped modem discussions at the Committee's last meeting. Clearly, 9600-bit/s modems are needed. Equally clear is that even higher speeds, eg 56 kbit/s, will be needed soon. While current TNCs will support 9600 bit/s, TNC development will be needed, and must parallel the development of 56-kbit/s modems.

On a related topic, Dr. Magnuski reported on some developments in 9600-bit/s modems that make use of voice-grade channels. Current Rockwell chip sets are priced at \$270, but there may be a substantial drop to the \$50-100 price range when the modems are integrated into a single chip. Mr. Karn pointed out that this kind of 9600-bit/s scheme would have the advantage of working with an unmodified FM voice radio. Dr. Magnuski will keep the Committee advised of price changes and results of on-air tests.

3) Networking and Transport Protocols

Mr. Karn reported on his Xerox 820 implementation of the ARPANET Internet Protocol Suite, which includes Internet Protocol (IP) with all options, Transport Control Protocol (TCP), User Datagram Protocol (UDP) and a rudimentary Field Transfer Protocol (FTP).

Mr. Fox reported on the implementation of a virtual-circuit networking protocol using a TAPR TNC 2 (or clone) by Howie Goldstein, N2WX.

Messrs. Karn and Fox were requested to supply more-specific progress reports on these significant developments.

4) Message Transfer Protocol

A message-transfer protocol proposed by Jack Sanders, NC4E had been given to Committee members who attended the last meeting. The Committee acknowledged that there was some fresh interest in such a protocol for NTS traffic. Mr. Linstruth said that he has sent software to active ARES stations to evaluate and that he was interested in leading the evaluation of this protocol. (Subsequent to the meeting, Mr. Linstruth said that he would work with Mr. Sanders and David Cheek, W4SMMD, who is also interested.)

5) Next Committee Meeting

Mr. Rinaldo asked that the Committee consider a long-weekend meeting in Newington prior to the next Board Meeting. After discussion, the weekend of June 14-16 was selected.

6) International Issues

Jeff Ward, G0/KOKA, (former editor of Gateway) an observer at the meeting, reported on the regulatory problems with packet radio in the UK. In brief, they are:

- (a) repeaters are strictly controlled in the UK, and there is no allowance for digipeaters;
- (b) amateur-to-amateur traffic is allowed, but point-to-multipoint transmissions fall under the UK definition of impermissible broadcasting;
- (c) no 2-meter frequencies are available for packet, and all higher-frequency bands are shared with other services.

From W4RI

HAM RADIO VIDEOS -- continued from page 13

First for review is a hand-held, battery-operated, 8-mm video camera. A CCD (Charge Coupled Device) Sony Handycam that has big camera capabilities with sharp color pictures, yet is tiny and light weight. The camera includes a built-in cassette recorder that could fit inside your lunch bag with reserve space for cookies.

To keep the size small, the lens has only three positions of focus: close, medium and distant. This fascinating little camera, its lens, separate playback unit, and a few 8-mm cassettes thrown in the deal, costs about \$1600.

Next on display is a typical shoulder mounted camera, similar to those you see on TV sport shows. This well-balanced camera is the Sony Betacam, which uses standard half-inch L-500 cassette tapes in its recorder.

Kent says, "Through higher tape speed and three separate luminance (Y) and chrominance channels (Y, R - Y, and B - Y) plus the magic of quadrature, it works amazingly well for half-inch tape. The video industry has taken consumer grade VCR cassette tape and, in only ten years, refined performance to offer the finest production possible."

Even the audio circuits give great quality, the camera can input two external microphones for stereo recording with Dolby noise reduction on playback. An all-purpose microphone mounted on the front of the camera is a standard feature.

The slip-in battery lasts for about thirty minutes of recording time. This camera, with built-in recorder and separate playback unit, shocks club members with a house-sized price of \$40,000. So, besides being enlightening and educational, the equipment cost used in this presentation far exceeds the cost of any previous club activities. No one is sleeping during this intriguing program.

Finally, our attention is drawn to a tripod mounted industrial grade camera which uses three video tubes (red, green, and blue) that are so sensitive they give brilliant color fidelity and sharp images, even in low light. You'll find this camera useful for making training videos inside manufacturing plants or for

close study of a process.

Kent alerts us to watch for future developments in digital video, with easier editing and enhanced video capability.

Club members ask questions, get thorough answers, and then are allowed to carefully heft and operate the cameras to experience the fun of seeing themselves on TV. N19U offers a practical Ham Radio use for his camera expertise and the professional equipment - he'll be shooting some video recordings of the club's Field Day activities this summer.

DAFFYNISHUNS - From THE DUPE SHEET, W/K ARC

Parasitics--something that eats away at antennas, coax, etc. that makes them fail or fall down. Believed to be a living creature that can sense the start of a contest.

Dipole Antenna--an antenna strung between two poles.

Digital Logic--counting on your fingers during VEC exams.

Phase Shift--going from half moon to full moon.

Decay Time--when the antenna falls down. See "Parasitics".

Grounding--a form of punishment for teenagers who do wrong.

Carrier--long, wide Navy boat used to launch airplanes.

CRT--Abbreviation for "CURT", a man's name.

2 meters--a feature of modern SWR bridges.

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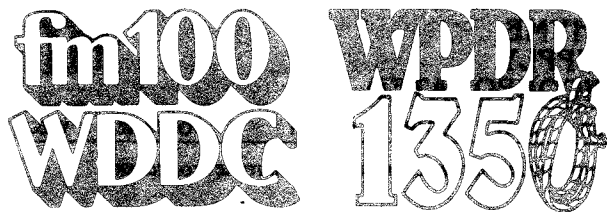
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HAIL	Hungarian meteorologist
FOT	Polynesian shoe maker
JAILER	Warden of the Tokyo prison
STING	Dudanese beekeeper
VEIN	Canadian cardiologist
FOD	French chef
SPILL	Butter-fingered Warsaw ham
SPON	Cutlery salesman from Warsaw
STILL	Sudaese whiskey bootlegger

Thanks to Rockford ARA's HAM RAG for the cover cartoon.

That's it for another month. Hope you enjoy this issue and we will see you next month. 73 de bass staff.

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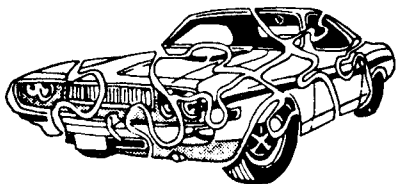
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